



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,012	01/16/2004	Tomoyuki Kojima	0051-0217P	5749

2292 7590 06/04/2009
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

MCCALISTER, WILLIAM M

ART UNIT	PAPER NUMBER
----------	--------------

3753

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

06/04/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/758,012	Applicant(s) KOJIMA ET AL.	
	Examiner WILLIAM MCCALISTER	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/15/2009 (amendment).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 7 and 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/15/2009 has been entered.

Claims 2-6 and 8 have been cancelled. Claims 1, 7 and 9-13 are pending for consideration.

Claim Objections

2. Claim 10 and 12 are objected to because of the following informalities: they repeat the phrase "the increased work load rate". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3753

4. Claims 1 and 7 recite the limitation "the minute sectional channel" at lines 14 and 15, respectively. There are insufficient antecedent bases for these limitations in the claims. Are these the minute sectional suction channels of lines 13 and 14, respectively?

5. Claims 1 and 7 recite the limitation "the sectional area" at lines 13-14, and 15, respectively. There are insufficient antecedent bases for these limitations in the claims.

6. Claims 1, 7 and 9-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 1 and 7 recite "the sectional area" (lines 13-15). Which sectional area? All three-dimensional objects (except for a sphere) have more than one sectional area. The minute sectional suction channel is not disclosed to be spherical in shape.

b. What are maximum and minimum levels of a vacuum pressure (lines 26-27 and 30-31 of claims 1 and 7, respectively). Are they high and low pressures, respectively? Or, are they high and low vacuums, respectively (and therefore low and high pressures, respectively)?

c. Also, claims 1 and 7 further define "the sectional area of the minute sectional channel" (Examiner's underline). Assuming that a minute sectional channel is a minute sectional suction channel, which of the plurality of minute sectional suction channels is being further defined?

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1, 7 and 9-13 as understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Arishiro (US 2001/0008061) in view of Mori (US 5,191,218).

Regarding claim 1, Arishiro discloses a vacuum suction system (see FIG 11), comprising:

- a vacuum leak generation part (generally, member 5),
- a vacuum generation mechanism (35) connected to the vacuum leak generation part,

wherein the vacuum leak generation part (generally, member 5) includes:

- a table base (inherently table 5 must be supported by some structure) disposed on a side of the vacuum generation mechanism,

- a vacuum suction channel (see annotated FIG 7 below),

- a conveyor table (5) rotatably mounted on the table base (whether or not the conveyor table rotates *with respect to* its inherent base is seen as immaterial to the broadest reasonable interpretation of this phrase), and

- a plurality of work receiving openings (12) for receiving works (9),

- each work receiving opening being connected to the vacuum suction channel, through a minute sectional suction channel provided on the conveyor

Art Unit: 3753

table (see annotated FIG 11), the sectional area of the minute sectional channel being smaller than that of the vacuum suction channel (as seen in FIG 11, the minute sectional suction channels are smaller (shorter) than the vacuum suction channel).

Arishiro does not disclose the vacuum level adjustment mechanism as claimed. Mori teaches that it was known in the art at the time of invention to employ a vacuum level adjustment mechanism (113a, 114a, 115a-b, 116a, 117, 120; see FIG 6) connected to a similar vacuum leak generation part (106, 111). Mori teaches the vacuum level adjustment mechanism to comprise:

- a negative pressure sensor (113a) to detect a vacuum level of similar work receiving openings (106₂) of a similar work table (106),

- an adjustment part (115a, 115b) which adjusts the vacuum level of the vacuum leak generation part based on a signal from the negative pressure sensor (col. 9 lines 38-42), and

- a compressed gas generation source (116a) for generating compressed gas,

- wherein the adjustment part is adapted to jet out the compressed gas from the compressed gas generation source to the vacuum leak generation part based on the signal from the negative pressure sensor (by operation of control valve 115b, see col. 9 lines 30-32 and 38-42), and

Art Unit: 3753

wherein the adjustment part (115b) jets out compressed gas based on the signal from the negative pressure sensor when the vacuum level rises above a maximum level, and stops the compressed gas when the vacuum level falls below a minimum level (these correspond to the upper and lower tolerance of the pressure sensor and controller, since pressure in passageway 111 is maintained constant by control of valve 115b based on the pressure sensor reading, see col. 10 lines 23-32),

To more accurately control Arishiro's vacuum suction system using closed-loop feedback, it would have been obvious to one of ordinary skill in the art at the time of invention to supplement Arishiro's vacuum suction system with a vacuum level adjustment mechanism, as taught by Mori.

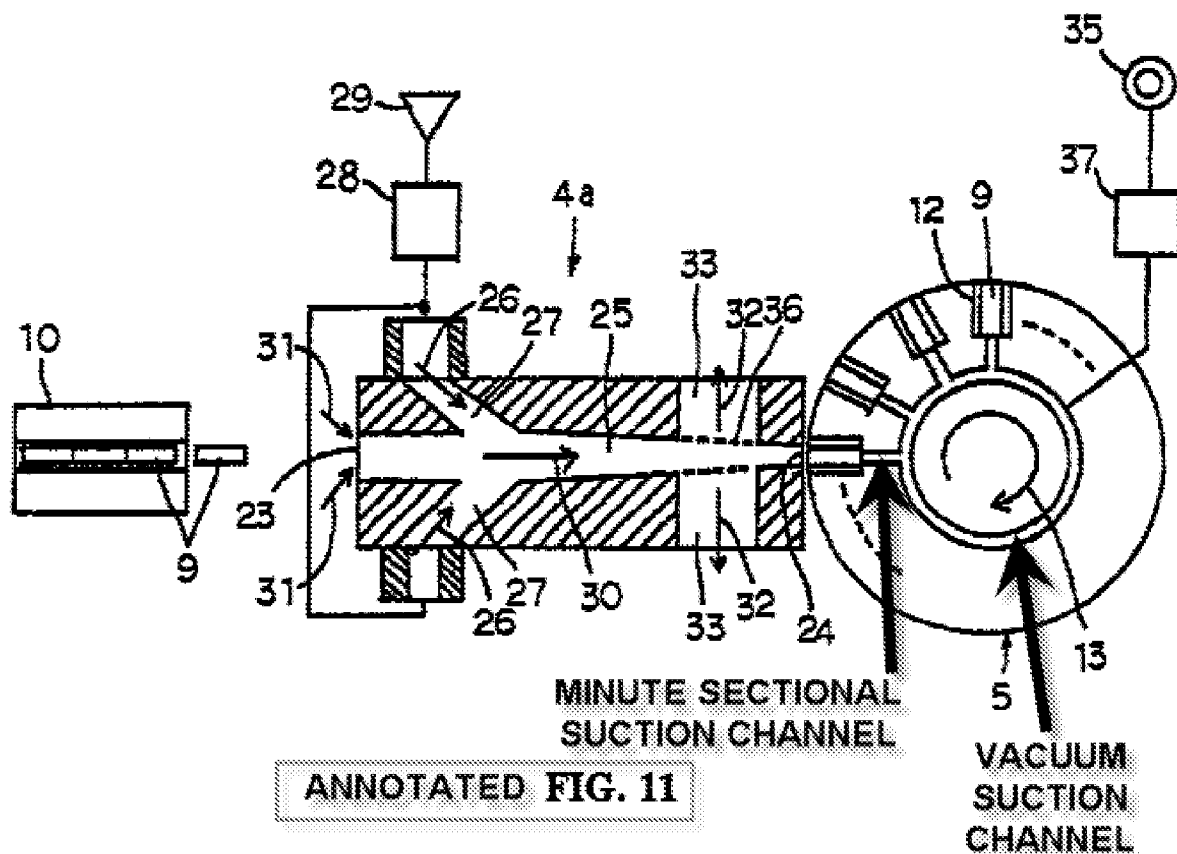
Mori does not disclose the compressed gas to be air. To decrease the cost of operating the Arishiro-Mori system, it would have been obvious to one of ordinary skill in the art at the time of invention to use air as the compressed gas rather than helium, since Arishiro teaches that air is suitable for use in his process (see air supply 29).

Also note that the combined system would necessarily result in the maximum vacuum level being effected by an increased work load rate and the minimum vacuum level being effected by a decreased work load rate (the addition and removal of work

Art Unit: 3753

pieces is what raises and lowers the vacuum level, as explained in Applicant's specification at p. 2 lines 20-28).

Alternatively regarding the relative sectional areas, it would have been obvious to form the vacuum suction channel of a larger bore diameter than that of each minute sectional suction channel, to predictably ensure that an adequate vacuum is supplied to each of the minute sectional suction channels.



Art Unit: 3753

The method of claims 7 and 9 would necessarily be performed during the normal and usual operation of Arishiro's vacuum suction system as supplemented with Mori's vacuum adjustment mechanism (the obviousness analysis regarding the use of air is incorporated by reference). (Regarding claim 9, the release of compressed air inherently occurs intermittently, for otherwise there would be no need for valve 115b.)

Regarding claims 10 and 12, the combinatorial apparatus would maintain the vacuum level of the work openings regardless of the work load rate. This is what Mori's feedback vacuum pressure control adjustment mechanism does (see col. 10 lines 28-32).

Regarding claims 11 and 13, all conduits provide pressure resistance because of frictional losses associated with the contact between flowing fluid and the conduit walls.

Response to Arguments

9. Applicant's arguments filed 4/15/2009 have been fully considered but they are not persuasive.

a. Applicant argues that Arishiro does not disclose certain claimed features (Remarks, p. 10), and that Mori does not disclose certain claimed features (Remarks, p. 11). In response, Examiner agrees that Applicant's claimed invention is not anticipated. However, the combination of Arishiro and Mori render the claimed invention obvious.

Art Unit: 3753

b. Applicant argues that Arishiro does not disclose the section area of the minute sectional suction channel to be smaller than that of the vacuum suction channel (Remarks, p. 11). In response, this language is seen as broad and indefinite, as detailed in the rejection above.

c. Applicant argues that Mori fails to disclose that the work load rate determines the vacuum level (Remarks, p. 11-12). In response, this characteristic is seen as inherent, as discussed in Applicant's specification, since the presence of work pieces in the work receiving openings would hinder the inflow of gas through the work receiving openings (and therefore the creation of a vacuum), and the absence of work pieces obstructing the work receiving openings would facilitate the inflow of gas through the work receiving openings.

d. Applicant argues that Arishiro and Mori are non-analogous art (Remarks, p. 12). In response, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Arishiro, Mori and Applicant all deal in the art of pressure regulation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM MCCALISTER whose telephone number is (571)270-1869. The examiner can normally be reached on Monday through Friday, 9-7.

Art Unit: 3753

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM MCCALISTER/
Examiner, Art Unit 3753

/STEPHEN HEPERLE/
Primary Examiner, Art Unit 3753

WM
5/30/2009